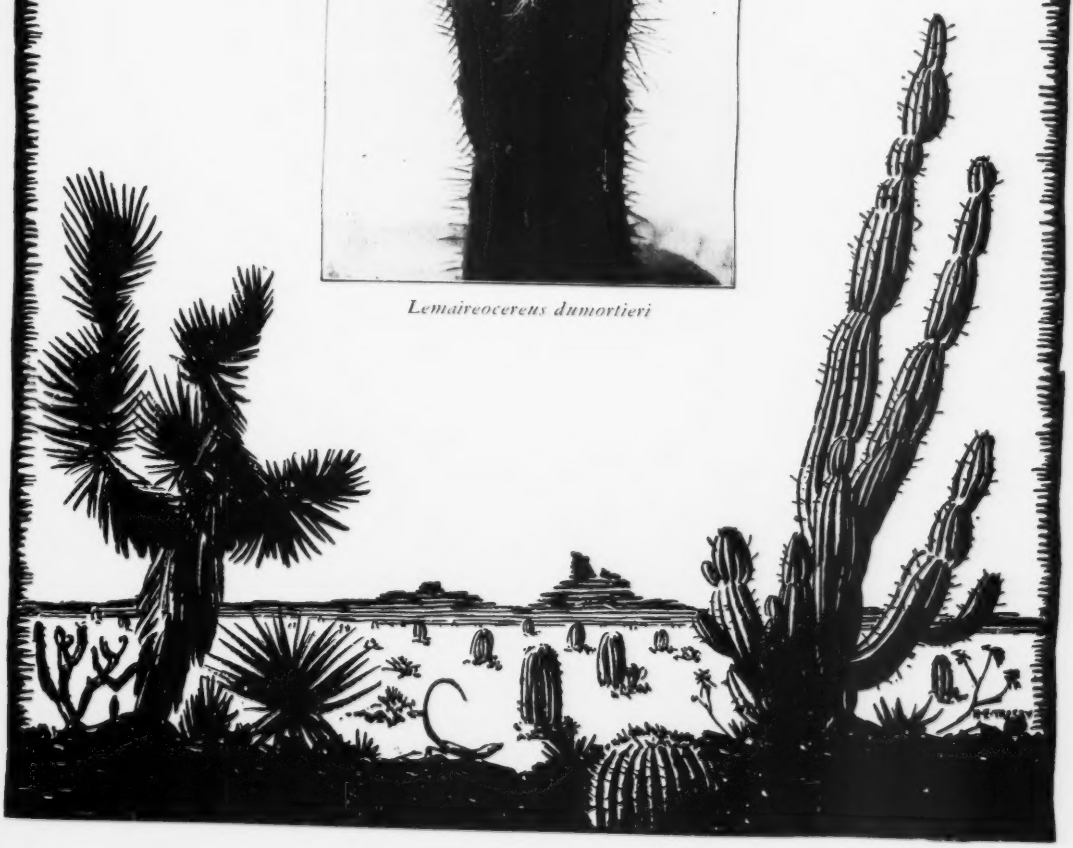
CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society Of America

Vol. 1 MAY, 1930 No. 11

Lemaireocereus dumortieri



Journal of the

CACTUS AND SUCCULENT SOCIETY OF AMERICA

Published by

THE CACTUS AND SUCCULENT SOCIETY OF AMERICA

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A monthly magazine to promote the Society and devoted to Cacti and Succulents for the dissemination of knowledge and the recording of hitherto unpublished data in order that the culture and study of these particular plants may attain the popularity which is justly theirs. "The Cactaceae," by N. L. Britton and J. N. Rose, has been adopted by this Journal for purposes of identification. (Membership and subscription $3.00 per year, foreign $3.50.) Mail membership application and subscription to the Secretary, Mr. W. M. Ketteringham, 610 West 65th Street, Los Angeles, Calif.

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VOLUME I. MAY, 1930 NUMBER 11

MELOCACTUS

Among new arrivals at Golden Gate Park, San Francisco, are three very fine specimen plants of *Melocactus*, commonly called "Turk's Cap" or "Pope's Head." They are all very old plants, and one of them has two reddish woolen caps on the crown, a growth very much resembling a *Turk's turban, from which it derives its name.* These plants are readily distinguished from other cacti by their short yellowish spines. They produce small red flowers on the cap, which turn into a bright red seed pod. They are very common in the West Indies, where they are native, and are reputed to attain the size of a barrel and reach the age of three to four hundred years.

They require a great deal of heat, a light sandy soil, and very little water, and are known to botanists as *Cactus lemairei* (Monville).

An article on the flowers of the southwestern desert lands is to be found in April Touring Topics. Ethel B. Higgins, the author, knows her cactus, and the local automobile magazine has, as always, given us an excellent story, adding further to the intense interest in these evil-looking plants with their heavenly blooms.

The April Ladies' Home Journal, too, has contributed in color its share toward the ever-growing popularity of cactus, now amounting to a craze. Harold Bell Wright, loving and living on the desert, writes the introduction to Dean Thornber's "Desert Flowers." Dean John James Thornber, M.A., is Professor of Botany at the University of Arizona and is a member of the Society.

Mr. Alain White is returning to Litchfield, Conn., and plans to visit the wonderful Santa Barbara collections en route.

Dr. A. D. Houghton and President Willis were the judges of the cacti and succulents at the Spring Flower Show in Pasadena, April 16th to 19th.

Mail subscriptions to Boyd L. Sloane, 1421 Dominion Ave., Pasadena, Calif. Subscription price $3 per year with or without membership; foreign $3.50.

I enclose herewith $ for one year's dues in the Society and one year's subscription to the *Journal of the Cactus and Succulent Society of America.*

Name .....
Address .....
City ..... State .....

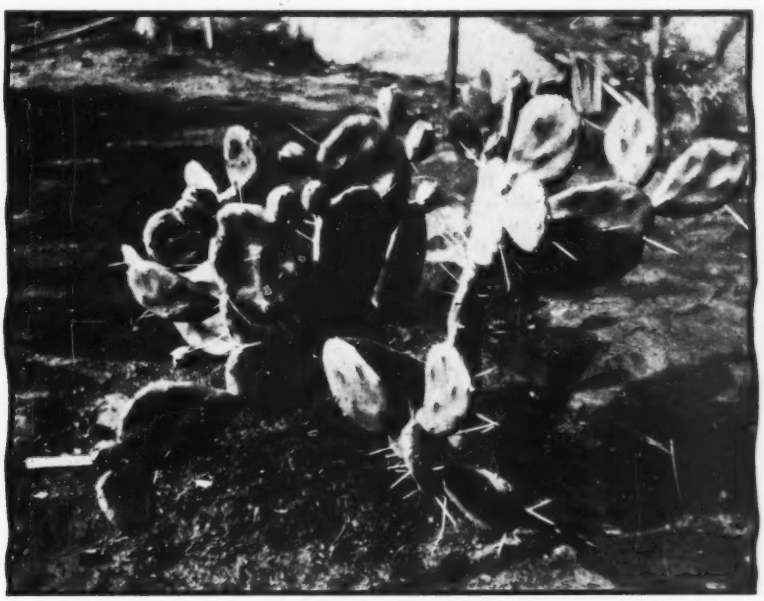

Photo by E. W. of plant in collection of Mrs. John D. Wright.

Fig. 1. *O. elata* var. *obovata*, new variety. x 0.1

SPECIES

By ERIC WALTHER

Among the various scientific concepts needing to be explained to beginners are the terms genus and species (*[1]). Everyone of course knows that the first part of a scientific name, whether of plant or animal, is the generic name, and the second one the specific name, commonly followed by the name of the author, either of the specific name, or of the combination. To make plain the meaning of these terms is not quite so simple, though; and to put the matter into such bald terms as "a genus is a larger or smaller group of species agreeing in one or more important characters" or "a species is a smaller group of individuals having more in common with each other than with other groups," is saying very little indeed.

The modern systematist has rather more compelling reasons for grouping his material, in most cases basing his classification on the external evidences of a more or less remote common ancestry. This relationship may be expressed by external vegetative characters, internal structure such as comes within the provinces of histology and cytology, chemical constitution, floral and fruit structure, a community of ecological association or geographical distribution, etc., etc.

The uniformity of the groups mentioned above is of course only relative, and modified by their inherent tendency to vary, the last being the real cause of evolution. Since no one can seriously doubt the fact of heredity, or the greater chance of survival of those individuals or groups possessing advantageous variations, Darwin's theory still holds good today, the only serious departure of modern days being in regards to the cause and degree of change.

Ordinarily species are fairly well marked and quite constant, even when considering many generations of innumerable individuals, widely distributed geographically. Sometimes, though, a species may vary widely in one or more points, even in characters of considerable importance in other cases. Of course it is often difficult to state when the sum of these variations and differences becomes great enough to constitute a new group. Only long study and wide experience in as large a field as possible can lead to a

(*[1]) *Plural:* genera and species.

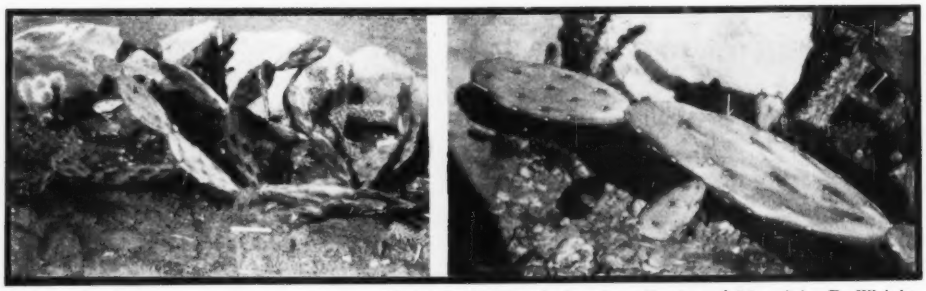

Photo by E. W. of plant in collection of Mrs. John D. Wright

Fig. 2. *O. elata* var. *oblongata*, new var. x 0.06. Fig. 4. *O. elata* var. *oblongata*, new var. x 0.15

clear and definite conception of the real value inherent in these various internal and external features. To illustrate this point more clearly we may be permitted to cite a recent experience, showing what a species is not; and we ask Dr. Houghton's indulgence if we may appear to trespass upon his province.

The writer recently was privileged to make some taxonomic studies in the *Cactaceae*, comprising the collection of Mrs. John D. Wright of Montecito. Special attention was paid to *Opuntia*, notoriously difficult even with the help of all available literature. This difficulty is to be expected in such a large and widely distributed genus, even if it is aggravated by the tendency of some authors to found species on insufficient, largely vegetative characters not necessarily expressing natural relationships. This comment may seem unnecessary, as it is of course a well-known fact that the present classification of the genus *Opuntia* is largely artificial, and will have to remain so until more intensive inquiries may be made in the field. An instance occurred in the course of the writer's work which throws a most interesting light on this question of species, and may be well worth relating.

Two plants of *Opuntia*, rather widely grown in our local collections, were obviously different, yet on closer investigation found to be possessed of many points of similarity. In spite of the fact that various students had considered them distinct species, even placing them into different sections of the genus, the idea occurred to the writer that they might be merely forms of one species. And so they turned out to be, as the sequel shows. On enquiring of Mr. Orpet, who has both forms in his collection, he stated that the one described below as var. *oblongata* (*2) was obtained by rooting a cutting of the other form, here termed for the sake of clarity var. *obovata* (*2). Subsequently, Mrs. Wright revealed that she had exactly the same experience. Now, if there is one point on which systematists are agreed it is that ordinarily species do not originate asexually. On the strength of this illuminating experience one may well wonder just how many other "species" there are in the genus *Opuntia* with equally insecure foundation, and whether some more satisfactory characters might not be found for specific differentiation. The two plants in question are shown in the accompanying illustrations, Fig. 1 and 3 being the original plant, and Fig. 2 and 4 the

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(*2) *O. elata* Link & Otto. (In Hort. Dyck. 36; 1834.)

var. *obovata* new variety.

Plant to 1 meter tall; with branches ascending or spreading;

Joints obovate, the ultimate ones rather readily detached, flat but somewhat turgid, 15 to 20 cm. long by 10 to 12 cm. broad, pois-green, deep slaty brown (Ridgway) below the areoles, glabrous, somewhat shining, margins scarcely repand;

Areoles about 4 cm. apart, slightly raised, white-wooly;

Glochids short, brown;

Spines present on only a few, usually the upper areoles, mostly solitary, stout, subulate, white with pale brown base and tip, 5 cm. long, porrect;

Flowers orange, large, to over 5 cm. in diameter;

Ovary spineless, colored as the joints;

Fruit obovoid, globose, 5 cm. long and 3.5 cm. thick, with depressed umbilicus;

Seeds flattened, 2 to 4 mm. in diameter.

var. *oblongata* new variety.

similar to the foregoing, differing as follows:

Height 30 to 60 cm.; *branches* decumbent-ascending; *joints* elliptic-oblong to oblanceolate, 10 to 20 cm. long by 3.5 to 7 cm. broad, color and armament as in preceding variety.

vegetative sport. For the sake of record and to make the matter quite clear the two forms are shortly described on preceding page, (see footnote *2).

They are here placed into *O. elata* Link & Otto, with some hesitancy, as the fruit is obo-

Fig. 3. *O. elata* var. *obovata*, new variety. x 0.25

void-globose rather than oblong, with a deeply depressed umbilicus, and with apparently smaller seeds. Space is lacking to discuss their affinities more fully, but *O. vulgaris* (*O. monacantha* Haw.) is undoubtedly most closely related, differing in the thinner, brighter green, more shining joints not purple-blotched below the areoles.

From the many other species with which these two forms have at various times been confused they may be told by the following characters:

Joints glabrous, dark green, scarcely repand at the margins, only slightly turgid; spines present, not confined to margins, but usually only at few of the areoles, porrect, white, solitary.

In conclusion we freely invite comment, and especially news of any observations, whether confirmative of our opinion or not.

Monatsschrift Der Deutschen Kakteen Gesellschaft has issued the March and April number under one cover and in the future all issues will be printed bi-monthly.

THE SUCCULENT SHOW

The second annual exhibit of succulents by the Garden Club division of the Shakespeare Club of Pasadena met with a gratifying response, both in numbers of exhibits and in attendance.

Hundreds of plants, the best of their kinds, as witness the multi-colored ribbons attached to them, lined the walls of the club rooms, as dozens of cars lined the street curbs two deep, for blocks, testifying to the eager interest of the public.

Mr. Hertrich of the Huntington Botanic Gardens, Mr. Ernest C. Rost and Mrs. Harry Blake were the Judges.

The junior division made a great hit. McKinley School and a young exhibitor, by name Billy Clark, carrying off the silver cups. This young Clark is aged 8 years; did all the work of collecting, potting and arranging of his exhibit himself, and has organized a cactus club of his own with half a hundred members, all boys who are interested in these grotesque plants. The judges gave him the blue ribbon, the special ribbon, the cup and several specimens of cactus, and if there had been anything else to give him they would have bestowed it.

Governor Young was one of the guests at the annual luncheon which preceded the show, at which Mrs. Blake was introduced as the only woman ever to have served as judge of a cactus exhibit.

MRS. LAWRENCE.

A letter from Japan that tells its own story is as follows:

Messrs. Cactus & Succulent Society of America

Dear sirs;

Please take note that we are now preparing with our best attention at our nursery, and are expecting to ship at the end of this month or first part of next month an Opuntia that grows hedges in Japan, for your perusal.

Would say we are much interested to import the Cactus Journal for literature purposes, from your side: and if you are in a position to supply us the same, please write us the prices and relative expenses, and if you are not interested to supply us the same, it shall be a great favour.

Awaiting your further valued news, we are

Dear sirs,

Yours very truly,

T. HIROYUKI.

"If there is anything I can do to help, please do not fail to call on me.

PRICE CROSS, JR., Texas.

MORE "LIVING STONES"

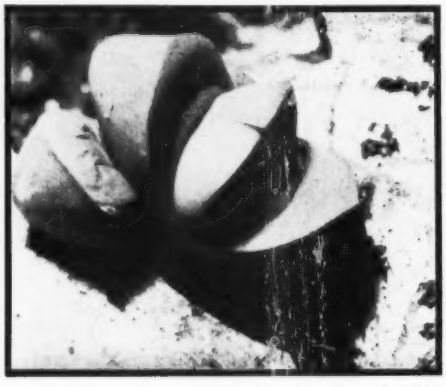
LAPIDARIA - DINTERANTHUS - RIMARIA

By James West, San Rafael

The Mesembrieae that we are bringing before our readers this month, have, in addition to being fairly close relations, one obvious characteristic in common, which they share with such genera as *Lithops, Argyroderma* and *Titanopsis,* already discussed in these pages. This is the remarkable way in which they have assimilated themselves in shape and color to the stony ground they inhabit. Most of the species are of comparatively recent discovery, which is not strange, considering their usually rather limited range, and the fact that this very habit of melting into their surroundings must of necessity often make their discovery, when not in flower, the matter of a lucky accident.

Our first species came to light as recently as 1919 under the name of *M. margaretae* Schwantes. N. E. Brown described the same plant independently three years later as *Argyroderma roseatum,* but made the new combination *A. margaretae* in 1926, after having recognized its identity with Schwantes' species. As the revision of *Mesembrianthemum* proceeded, it became clear that it could not properly be retained in *Argyroderma* by reason of divergent floral characters, notably the presence of several stigmas of the type normal in *Mesembrianthemum* instead of the very unorthodox single discoid stigma of *Argyroderma.* So Schwantes placed it in the new genus *Dinteranthus,* only to give it, soon after, a genus of its own, as *Lapidaria margaretae* (lapis, Latin—stone; after Miss Margaret Friedrich).

In appearance the plant bears considerable resemblance to an *Argyroderma,* as may be seen from our illustration, especially in the smooth firmness of the highly succulent leaves. But instead of the greenish white of "Silver-skin," we find a very distinctive and beautiful color, perhaps best described as old rose, over-laid with a tinge of grayish violet. This at least is the color of cultivated plants, shown at all times, and apparently without regard to exposure. The surface is extremely smooth and regular, as if carved out of rosy marble, and shows neither granulation nor dotting. A slight exception to the latter character is present in the first true leaves of young seedlings, which show a single line of regularly spaced darker dots along the margin, quite as if a row of miniature buttons were holding together the seam formed by the closely appressed leaves. This characteristic, lost with age, we have not seen recorded in other descriptions of the plant.



x2.5 Photo by West.

Lapidaria margaretae Schw.

According to Mrs. Bolus, plants fresh from the veld show a distinct yellow line along the angles; also, as might be expected, the leaves are less regular and more wrinkled than in cultivated plants. They normally branch at the ground into clusters of about four growths of from 2 to 4 leaf-pairs each. The flowers, about 1 in. in diameter, have 7 sepals, petals in 3 to 4 series, golden yellow, tinged reddish on the back, forming a cup concealing the basal part of the stamens, which latter are of varying length, the outer and longer ones erect, the shorter inner ones bent into a cone around the stigmas, which number from 6 to 11, and equal the longest stamens.

L. margaretae is found growing in quartzite, and hails from Great Namaqualand (Warmbad, S. W. Africa, being the type locality) and from south of the Orange River in Bushmanland near Pella and Pofadder.

Culturally it does not seem to be trouble-

some, given perfect drainage and protection from excessive moisture in winter. It grows well from seed, which is procurable from several foreign dealers, but as yet it is to be classed among the rarities in this country.

The segregation of *Lapidaria* leaves four species in the original genus *Dinteranthus*, "Dinter's Flower," after Prof. K. Dinter, formerly Government Botanist of German Southwest Africa). This genus differs from the former in the following characters: Plants have only one (or, when new growth is being made, two) leaf-pairs present on each growth at one time (about three in *Lapidaria*); the leaves are dotted, their surface granulated, instead of perfectly smooth; the flowers, commonly pink, not yellow, have petals in two series (not 3 to 4), spreading so as to expose the base of the stamens; in the fruit the cells are open, not nearly closed with a membrane as in *Lapidaria*. Like all the genera in this group, the plants form tufts of several growths or branchlets each.

D. microspermus (Dtr. & Derenb.) Schw. (*Rimaria microsperma* N. E. Br.), from the same district as *L. margaretae*, is distinguished by its unusually small seeds, whence the specific name; the leaves are closely appressed, almost hemispherical in shape, with an indistinctly marked keel towards the tip, giving the united pair somewhat the shape of an onion; the surface is granular, light gray in color.

D. pole-evansii Schw. (*Rimaria P.-E.* N. E. Br.) (after Dr. I. B. Pole-Evans, of Pretoria, Government Botanist of South Africa) has leaves on the same order, pale dove-grey in color, and rather large and showy rose-pink flowers, which as in all our species, arise from between the leaves of a pair. It occurs among granite boulders in the Prieska Division.

D. puberulus N. E. Br., from Little Namaqualand, distinguished by velvety ("puberulous") surface, and *D. inexpectatus* (Dtr.) Schw., a S. W. African species, complete the list.

The third of our genera, *Rimaria* (from Latin *rima*—a cleft or fissure) is immediately distinguished from the foregoing by a closer union between the leaves of each pair, these being completely fused into a single body for from one-half to one-third of their length, and very closely appressed for the rest of the distance, so much so, that the line marking the separation is apparent only on closer inspection at certain stages of growth. The resemblance to a tightly closed mouth is rather striking. The leaves, often unequal in length and so closely joined, make one think of an overgrown *Conophytum* or perhaps *Gibbaeum*. In texture they lack the hard opaque smoothness of *Lapidaria* and the granulation of *Dinteranthus:* they are smooth and turgid, without pronounced angles or keels. The bodies or leaf-pairs are of a more or less lengthened egg-shape, usually somewhat compressed laterally, green or whitish in color. The flowers follow those of *Lapidaria* in general structure.

x1.5 Photo by West

Rimaria heathii N. E. Br.

R. heathii, N. E. Br., is the type-species. It is named for Dr. F. Rodier-Heath, who succeeded in raising plants from seed saved from the first plant sent to Kew, after it had failed to survive. Our photograph shows the general appearance of a single body. The marks and scars visible on the surface are due partly to injuries received, partly to incipient shriveling of the mature pair of leaves preparatory to the emergence of the new growth. At the time the photograph was taken, the skin had split on one side, (not visible in the illustration) revealing the fresh green surface of the young leaves within. The texture is quite smooth, but without any gloss, rather soft and delicate, with a certain amount of translucence, about like that of alabaster. The color is a whitish pea-green, becoming purplish red in exposure. The plant has a long, thick rootstock which branches at the ground to form tufts of about 3 to 5 growths.

Prepare Your Exhibit Now for the 2nd Annual Cactus Show, May 29, 30, 31 and June 1.

The flowers, open from noon to dark are showy, reaching nearly 2 inches in diameter, white with cream-yellow stamens; they appear in fall.

R. heathii is reported by Mr. Brown to be difficult to flower under greenhouse conditions; better success may be expected in the open. The species has a rather wide distribution on the Little Karroo, growing among quartz. Miss Karsten quotes Dr. Muir as saying that the plant is a favorite food of the ostrich, and is on that account known to the Boers as "volstruis-water"—Ostrich's water.

R. dubia N. E. Br. resembles the former, but is much smaller in all its dimensions, and greener in color than that species. Flowers, fruit and locality seem to be alike unknown, which perhaps accounts for its name of the doubtful one. Doubtful also is a tentative identification of it with the long-lost *M. fissum* of Haworth.

R. roodiae N. E. Br. is a third species of the genus. It comes from Bushmanland and differs from *R. heathii* in having leaves microscopically hairy, faintly keeled, occasionally obscurely toothed and greener in color, and in the orange-yellow color of its flowers.

THE CACTUS CALENDAR

By Mrs. "Ned" Lawrence

Whether on the open desert or in our private gardens cactus is beginning to show its form. This year, semingly earlier and more beautiful than ever comes the flowering season especially for the succulents and most of the *Aloes*. Some of the *Epiphyllums* with their orchid-like form and color are flowering in hot-houses. The starry white clusters of the *Pachyphytum aduncum* and the yellow ones of the *Sedum pachyphyllum* is to be found in every garden. Nearly all the species covered by the general name of *Crassulaceae* are coming into flower.

Thelocactus lophothele is in gorgeous flower in one private collection and nearby the *Euphorbia splendens* flaunts its drops of sacred blood.

The following flowers have come under the writer's eye. Doubtless many others, elsewhere, and the writer will welcome the names each month of the plants known to be flowering:

Aloe arborescens.
Aloe aurea.
Aloe striata.
Aloe variegata.
Aloe splendens.
Astrophytum ornatum.
Ceropegia stapeliaeformis.
Dudleya echeveria pulverulenta.
Echinocereus engelmanni.
Echinocereus fendleri.
Carnegiea gigantea.
Echinocactus johnsonii.
Euphorbia splendens.
Bergerocactus emoryi.
Ferocactus uncinatus.
Ferocactus glaucescens, formerly designated as *O. pfeifferi.*
Aporocactus flagelliformis.
Opuntia basilaris.
Opuntia microdasys.
Opuntia spinosior, the lavender cholla.
Opuntia fulgida.
Opuntia mammillata.
Opuntia arbuscula.
Opuntia versicolor.
Opuntia blakeana.
Opuntia vaseyi.
Opuntia prolifera.
Opuntia parryi.
Neomammillaria elegans.
Neomammillaria grandicornis.
Neomammillaria elongata.
Neomammillaria macdougalii.
Fouquieria splendens, Ocotillo, the candle flower.

Editor's Note.—Send the names of your plants in flower to Mrs. Ned Lawrence, 376 North Avenue 57, Los Angeles. Future lists will include the owner's name, city, date of flower, and whether grown in hot-house, outdoors or if seen in its native habitat.

Mr. H. M. Wegener, 212 East 24th Street, Los Angeles, will welcome visitors who wish to see his collection of *Epiphyllums* or *Phyllocacti,* which are beginning to flower. He suggests that anyone interested should call afternoons and evenings only or on Sundays between May 1st and 20th. Those visiting Mr. Wegener will behold a beautiful sight.

Prepare Your Exhibit Now for the 2nd Annual Cactus Show, May 29, 30, 31 and June 1.

SECOND ANNUAL CACTUS SHOW

By NED LAWRENCE

Within the past few weeks I have received convincing evidence that the great sport of cactus collecting has lately engaged more active attention than ever before in the history of America.

Every few days some one—professional or amateur—proudly shows me some queer, unusual and probably rare specimen of cactus, and asks if I know its proper name and classification.

The story is usually the same—the prospector was hunting in some far-off canyon, mesa or mountain-side in Arizona, Mexico or other regions remote from civilization and off the beaten trail; and came upon this particular specimen. Further search fails sometimes to reveal duplicates, and the cactus hunter proudly brings his singular captive into his garden.

Which all goes to show what stimulus the Cactus and Succulent Society of America has given to the search for rare treasure, and how assured it is that the finding, keeping and cultivating of these rarer plants is bound to result in their prolongation of life and perpetuation to posterity.

Professional dealers in cacti and succulents are promoting the search for rare and choice specimens, by purchase at good prices, and are themselves rewarded by finding an active market which they may supply at considerable profit.

Which brings me to the point of urging every member of the Cactus and Succulent Society of America to contribute to the success of our forthcoming exhibition in the Ambassador Auditorium Annex, Los Angeles, May 29, 30, 31 and June 1st, by entering in competition his or her rare plants, or fine plants not so rare but in excellent growth and condition, and especially to compete for some of the many prizes scheduled in the list, which is published in this issue.

If any person not a member of the Society, whether a dealer, prospector, or outsider, has something unique, or exceptional in any respect, set it forth to be admired, and perhaps to be beribboned.

Of prizes there will be plenty. Of classes the scope is as great as prevision can calculate. More attention is given to succulents this year than at the show of last year. Competition is invited wherever it is thought possible to excite it.

Whether a member of the Society or not, it costs nothing to enter your cacti and succulents in this show.

But it is highly essential that the Show Committee be informed as soon as possible of who are to enter as exhibitors, and of how much space each will require.

Applications for space should be made at once to be registered by the Secretary of the Society (also Secretary ex-officio of the Show Committee) namely, Boyd L. Sloane, 1421 Dominion Avenue, Pasadena. Make application in writing to this address, or by telephone, Sterling 0735.

Applications for space may also be made to the Chairman of the Show Committee, Mr. J. A. Ekdom, or to President Willis, or to any of the executive officers, but must pass for review and registry to the Secretary of the Committee.

The smallest space to be allotted an exhibitor will be two lineal feet, or a space about 2x3. Space will be allotted in as much larger portions, as may be desired. But above all, *the applications should be made at once*, stating space desired, so that provisions may be made for acceptance and reservation before the show begins.

If any member of the Society is modest about his collection, thinking it may not compare favorably with some of the larger exhibits, he or she may be reminded that it is not quantity which counts as much as quality. One really fine, outstanding specimen may stand better show for a prize than a hundred indifferent ones.

Then again, the art of arranging cactus and succulents in groups, pots, bowls or miniature landscapes will be duly rewarded and will be popularity acclaimed. Freak growths, crested forms, grafts and monstrosities will be greatly appreciated in the scheme of our show.

If this Society is to perform a great public service and to make itself known far and wide as the foremost proponent of the conservation of a marvelous variety of American plants now rapidly becoming extinct, it must be through appealing to the general public through such an exhibition as our members are quite able to display if they will all unite in showing their splendid acquisitions of private stock.

Prepare Your Exhibit Now for the 2nd Annual Cactus Show, May 29, 30, 31 and June 1.

PREMIUM LIST

Request to members and friends of the Society. You will see below many vacancies in prizes offered and are earnestly requested to help the committee fill in these vacancies by sending in cash, cups, plants, or other prizes. Do it now since we must send out our application blanks very soon.

This preliminary list is subject to changes.

A1 SWEEPSTAKES: Judged by the combined judges. One prize only.
Sweepstakes cup presented by Mrs. Ysabel Wright of Santa Barbara, Calif.

A2 BEST STAGED COLLECTION: Large or small—arranged for effect either in containers or planted out. Rocks, etc., permitted.
1st. Los Angeles Chamber of Commerce Cup.
2nd. A clump of Ferrocactus acanthodes with 12 heads, presented by Mrs. Bertha Norwood of Long Beach.
3rd. One two-foot Carnegiae gigantea, presented by Mr. Kinney, Desert Nursery, Palm Springs, Calif.

A3 BEST RAREST CACTUS SHOWN.
1st. Cup, presented by Pres. Emeritus Dr. A. D. Houghton.
2nd. $5.00 presented by Mrs. Henry Bangs Lewis of Los Angeles. 3rd. $3.00.....

A4 BEST RAREST SUCCULENT SHOWN.
1st. $10.00.....
Also 6 Dudleya ingen seedlings in 2" pots presented by Miss Kate Sessions of San Diego, Calif.
2nd. $5.00 presented by Otto Roller, Union City, New Jersey.
3rd. $3.00.....

A5 LARGEST COLLECTION OF DIFFERENT CACTI.
1st. $25.00 Cash Prize presented by Alain C. White, Litchfield, Conn.
2nd. $15.00..... 3rd. $10.00.....

A6 LARGEST COLLECTION OF DIFFERENT SUCCULENTS.
1st. $25.00 Cash Prize presented by Mrs. Susanna Bixby Bryant.
2nd. $15.00.....
3rd. One fine plant of Echeveria metalica, presented by Mrs. Ann Powers of Oxnard, Calif.

A7 BEST COLLECTION OF GRAFTED PLANTS. Height of stalk used in relation to the graft will be considered in judging.
1st. $15.00..... 2nd. $10.00..... 3rd. $5.00.....

A8 LARGEST COLLECTION OF DIFFERENT CRISTATES AND MONSTROSAS.
1st. The President's Cup, presented by R. E. Willis, Los Angeles.
2nd. 4-foot Cereus peruvianus, presented by Mr. J. C. Butner.
3rd. $3.00.....

A9 BEST COLLECTION OF FREAKS: Unusual growths other than crests and monstrosities.
1st. Trophy presented by Hough Evans of Santa Monica, Calif.
2nd. Fine Cereus, presented by Mr. W. L. Maechtlen of Los Angeles. 3rd. $3.00.....

A10 BEST EXHIBIT FROM A DISTANCE: More than 200 and less than 700 miles from Los Angeles.
1st. $5.00 Cash and Express charges two ways. .....
2nd. $3.00 Cash and Express charges two ways. .....
3rd. $2.00 Cash and Express charges two ways. .....

A11 BEST EXHIBIT FROM A DISTANCE: More than 700 miles from Los Angeles.
1st. $5.00 Cash and Express charges two ways. .....
2nd. $3.00 Cash and Express charges two ways. .....
3rd. $2.00 Cash and Express charges two ways. .....

A12 BEST COLLECTION OF CACTUS AND SUCCULENTS: Entered by Junior under 18.
1st. $5.00 Cash.....also plant presented by Carl Ackerman
2nd. $3.00 Cash.....also plant presented by Carl Ackerman
3rd. $2.00 Cash.....also plant presented by R. E. Willis

A13 BEST COLLECTION OF CACTUS AND SUCCULENTS: Entered by a Garden Club or Community.
1st. Cup presented by Chas. Adams.
2nd. Plant presented by Mrs. E. F. Clark of Pasadena, Calif.
3rd. 6 cuttings each of 3 sorts of white Mesembrianthemums presented by Miss Kate Sessions of San Diego, Calif.

A14 BEST COLLECTION OF SEEDLINGS: Cactus or succulents under 2 years old.
1st. Astrophytum asterias presented by G. A. Frick.
2nd. Neomammillaria macdougalii presented by Col. Perrie Kewen.
3rd. Plant presented by R. E. Willis.

A15 BEST SCHOOL EXHIBIT.
1st, 2nd, and 3rd prizes, plants presented by William Hertrich.

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B1 BEST COLLECTION OF PERESKIAS AND PERESKIOPSIS.
1st. $3.00 2nd. $2.00 3rd. $1.00

B2 BEST COLLECTION OF OPUNTIAS.
1st. $5.00 2nd. $3.00 3rd. $2.00

B3 LARGEST COLLECTION OF EPIPHYLLUMS.
1st. $15.00 2nd. $10.00 3rd. $5.00

B4 BEST COLLECTION OF COLUMNAR CEREANAE: This includes Cereus, Cephalocereus, Trichocereus, etc. See Vol. II, Pages 1 and 2, B. & R.
1st. One 4-foot Carnegiae gigantea, presented by Mr. Kinney of the Desert Nursery of Palm Springs, Calif.
2nd. One fine Cereus, presented by Mr. W. L. Maechtlen of Los Angeles.
3rd. One Nyctocereus serpentinus, presented by Mrs. Francis Ghisi, of Los Angeles.

B5 BEST COLLECTION OF HYLOCEREANAE: This includes the vine-like, climbing, trailing or pendant cacti. See page 183, B. & R.
1st. $5.00 2nd. $3.00 3rd. $2.00

B6 BEST COLLECTION OF ECHINOCEREANAE: This includes Echinocereus and Echinopsis, etc. See Vol. III, page 3, B. & R.
1st. $5.00 2nd. $3.00 3rd. $2.00

B7 BEST COLLECTION OF ECHINOCACTANAE: This includes Ferocactus, Echinocactus, Astrophytum, etc. See Vol. III, page 77, B. & R.
1st. $5.00 2nd. $3.00 3rd. $2.00

B8 BEST COLLECTION OF CORYPHANTHANAE: This includes Coryphantha, Neomammillaria, etc. See Vol. IV, page 3, B. & R.
1st. $5.00 2nd. $3.00 3rd. $2.00

B9 BEST COLLECTION OF RHIPSALIDANAE: This includes Rhipsalis, etc. See Vol. IV, page 208, B. & R.
1st. $5.00 2nd. $3.00 3rd. $2.00

B10 BEST SPECIMEN OF ZYGOCACTUS OR SCHLUMBERGERA.
1st. $3.00 2nd. $2.00 3rd. $1.00

B11-100 BEST INDIVIDUAL CACTUS PLANT OF ANY GENUS: Entries under this classification must be show standard to win.
1st. $5.00 2nd. $3.00 3rd. $2.00
You may enter here any plant that you think is worthy of special attention.

C1 BEST COLLECTION OF EUPHORBIAS.
1st. $15.00 2nd. $10.00 3rd. $5.00

C2 BEST COLLECTION OF MESEMBRYANTHEMOIDS.
1st. Cup presented by James West of San Raphael, Calif.
2nd. $5.00 presented by Mr. Crouse of Los Angeles. 3rd. $3.00

C3 BEST COLLECTION OF ECHEVERIAS: Including Dudleya, Stylophyllum, etc.
1st. $5.00 2nd. $3.00 3rd. $2.00

C4 BEST COLLECTION OF ALOES.
1st. Fine plant presented by Mrs. J. H. Bullard. 2nd. $3.00 3rd. $2.00

C5 BEST COLLECTION OF HAWORTHIAS, GASTERIAS AND APRICAS.
1st. $5.00 2nd. $3.00 3rd. $2.00

C6 BEST COLLECTION OF SEDUMS.
1st. $5.00 2nd. $3.00 3rd. $2.00

C7 BEST COLLECTION OF SEMPERVIVUM.
1st. $5.00 2nd. $3.00 3rd. $2.00

C8 BEST COLLECTION OF CRASSULA.
1st. $3.00 2nd. $2.00 3rd. $1.00

C9 BEST COLLECTION OF AGAVES.
1st. One Agave kerchovei, presented by Miss Kate Sessions of San Diego, Calif.
2nd. $3.00 3rd. $2.00

C10 BEST COLLECTION OF STAPELIAS.
1st. $10.00 presented by Overbrook Nurseries.
2nd. $5.00 presented by Mr. and Mrs. H. Lightfoot Forbes of Los Angeles.
3rd. $2.00

C11-20 BEST COLLECTION OF ANY OTHER GENUS OF SUCCULENTS.
1st. 4 Mesembrianthemums, presented by Miss Kate Sessions of San Diego, Calif.
2nd. $3.00 3rd. $2.00

C21-100 BEST INDIVIDUAL SUCCULENT PLANT OF ANY GENERA: Entries under this classification must be show standard to win.
1st. $3.00 2nd. $2.00 3rd. $1.00
You may enter here any plant that you think is worthy of special attention.

Prepare Your Exhibit Now for the 2nd Annual Cactus Show, May 29, 30, 31 and June 1.

Greenhouse built for Mr. C. R. Holmes, Featherhill Ranch, Montecito, California. Bowman Greenhouse Manufacturing Co., 4254 Beverly Blvd., Los Angeles, California. EXposition 5841.

D1 BEST COLLECTION OF XEROPHYTES: In fancy pots or containers.
1st. Beautiful 12" Mexican Bowl with rare stones and cacti from Old Mexico. Decorated, planted, and presented by H. P. Brochelle of Los Angeles.
2nd. One 3-foot Carnegiae gigantea, presented by Mr. Kinney of the Desert Garden, Palm Springs, Calif.
3rd. $5.00..... 2nd. $3.00..... 3rd. $2.00.....

D2 BEST COMEDY LAYOUT: Must show horticultural skill.
1st. $5.00..... 2nd. $3.00..... 3rd. $2.00.....

D3 BEST MINIATURE CACTUS AND SUCCULENT LANDSCAPE: Amateur. Must be under 6 square feet. Applicable to desert conditions.
1st. Vase presented by A. J. Bauer Pottery Co.
2nd. Sterling Silver Spoon, Carnegiae gigantea handle, presented by Mrs. Lee Chamberlain.
3rd. .....

D4 BEST MINIATURE CACTUS AND SUCCULENT LANDSCAPE: Amateur. Over 6 be under 6 square feet. Applicable to desert conditions.
1st. Pasadena Horticultural Society Cup.
2nd. Sterling Silver Spoon, Carnegiae gigantea handle, presented by Mrs. Lee Chamberlain.
3rd. .....

D5 BEST MINIATURE CACTUS AND SUCCULENT LANDSCAPE: Professional. Must be under 6 square feet. Applicable to desert conditions.
1st. Vase presented by A. J. Bauer Pottery Co.
2nd. Prize presented by Mrs. Thaxter of Glendale. 3rd. .....

D6 BEST MINIATURE CACTUS AND SUCCULENT LANDSCAPE: Professional. Over 6 square feet. Applicable to desert conditions.
1st. ..... 2nd. ..... 3rd. .....

Prepare Your Exhibit Now for the 2nd Annual Cactus Show, May 29, 30, 31 and June 1.

Interior of C.R.Holmes greenhouse, showing typical modern construction for the promotion of cactus and general uses. Call Bowman Greenhouse Manufacturing Co., EX. 5841, for appointment

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D7 BEST XEROPHYTE BOWL: Amateur.
1st. ..... 2nd. ..... 3rd. .....

D8 BEST XEROPHYTE BOWL: Professional.
1st. ..... 2nd. ..... 3rd. .....

D9 BEST XEROPHYTE BOWL: Amateur.
1st. ..... 2nd. ..... 3rd. .....

D10 BEST LANDSCAPE GARDEN.
1st. $5.00..... 2nd. $3.00..... 3rd. $2.00.....

E1 BEST DISPLAY OF METHODS OF PROPAGATION OF CACTI AND SUCCULENTS.
1st. $5.00..... 2nd. $3.00..... 3rd. $2.00.....

F1 BEST EXHIBIT OF CACTUS GROWING AND HANDLING AIDS: Special tools, etc.
1st. ..... 2nd. ..... 3rd. .....

G1 BEST STRAWBERRY JAR: Succulents predominating.
1st. ..... 2nd. ..... 3rd. .....

H1 COLLECTION OF INSECT PESTS AND PARASITES, INIMICAL MOULDS AND FUNGI.
L. A. County Horticultural Commissioner.

J1 BEST COLLECTION OF PICTURES OF CACTUS AND SUCCULENTS: May be either or both.
1st. Cup presented by Mrs. Jannock.
2nd. ..... 3rd. .....
You may enter here any plant that you think is worthy of special attention.

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A corner of Mrs. John D. Wright's Student actus Garden, Santa Barbara, California.

A LIVING HERBARIUM

By YSABEL WRIGHT, *Santa Barbara*

Like most amateurs, I began my collection on a basis of spectacular and curious forms. That is a very seductive and interesting hobby and is being successfully ridden by many persons.

In my case, however, a small and purely accidental beginning has led to the inception of a rather ambitious plan.

Little did I know what was before me when, on February 14th, 1928, Mr. Ralph Hoffman, Director of the Santa Barbara Museum of Natural History, appeared early in the morning with a long and very sumptuous looking florist's box which he presented to me as a Valentine. I opened it eagerly, expecting, from the nature of the package, about four dozen long stemmed American Beauty roses, and found—a delightful selection of small specimens of cacti and succulents.

I planted them that very day on a little mound about seven feet in diameter and named it "Hoffman Hill."

These original plants of my collection must have had magnetic powers for they immediately began to attract gifts from other people, notably from Mr. Norton Stuart, at that time Curator of the Museum, and from Mr. E. P. Bradbury of Fontana, who gave me a plant or a cutting of every one of his *Opuntias*.

My collection grew with astonishing rapidity. Several trips to the desert and the devoted cooperation of my husband and my son, who will scramble down precipices, or climb almost vertical cliffs to get me longed-for specimens, soon made it necessary to enlarge the area I had originally intended to devote to my small and very amateurish collection.

We chance to have a hillside that is evidently an ancient stream bed, for it is strewn with huge boulders and smaller stones in rather picturesque array. It has a warm, sunny exposure which is frost-free, and the gradual slope insures the good drainage essential to cacti.

Little by little I developed the ambition to create a student's garden; a place where the cactus specialist can not only observe the growth and development of native and foreign specimens OUT OF DOORS, but where he can also

see spread before him in their consecutive order the several series that form the various genera. Just as the botanist is able to consult a herbarium by spreading out on a table the sheets on which the dried plants are mounted, I wanted to set before the student of cacti a LIVING herbarium.

At the suggestion of Mr. Eric Walther, who spent two weeks verifying and extending the nomenclature in my collection, I intend to follow the order adopted by Britton and Rose, since that is the "text" book that has been accepted by the Cactus Society, and quite rightly, too, in my opinion, as it is the only authority available to those who do not know the foreign language in which other books dealing with cacti are written.

For example, in the genus *Opuntia* I hope some day to have *O. mortolensis* planted next to *O. leptocaulis* and followed by *O. tesajo*, and so on through the entire series.

This work is only in its initial stages. I am making an effort to collect the plants systematically with this definite end in view and am preparing an area of over five acres which, as soon as I succeed in completing one series, I expect to plant in the fashion described.

While waiting, I am making a careful study of the plants already in my collection, photographing them at least once a year, making notes of their growth and development, keeping a faithful record of their period of flower, its duration, number of flowers, how long each flower remains open, how many flowers are open at one time on an individual plant. Miss Margaret Kincher is making for me accurate water color sketches of each new flower as it appears.

When I pollinate a flower I record the date and mark it. Then I note the date when the seed pod appears, when it ripens, when it falls or is picked, when the seed is sown, how long it takes to germinate, and as soon as each seedling appears it becomes an entity whose doings are carefully recorded in what I call my "Baby Book."

I have already separated my specimens into families and planted them in separate areas which, aside from facilitating their study, has horticultural advantages, for, with that arrangement it is easy to give the *Ferocacti* and *Echinocacti* very little water; the *Neomammillarias* the bit of shade which they love; the *Epiphyllums* only glimpses of sunshine; the *Hylocereus* and *Acanthocereus* (especially the tropical ones) plenty of water but with the most carefully planned drainage.

I wish that others would attempt something along these lines, so that when we have accumulated a certain amount of data, we might hold a "round table" to compare notes.

ECHINOCARPAE

By DR. ARTHUR D. HOUGHTON

The fourth series of Britton & Rose's subgenus *Cylindropuntia* is called *Echinocarpae*. The *Opuntias* in this series have spines with papery sheaths, numerous, many jointed branches, areoles always with more than one spine, branches always more than ¾ inch in diameter, and dry, spiny fruits.

The series consists of four species from the southwestern United States and the neighboring Mexican states of Sonora and Baja California.

The first two species have tubercles on the stems and branches, which are from two to three times as long as they are broad; the fruit of *O. acanthocarpa*, which has long spines and strong tubercles, making it easy to tell from *O. parryi*, which has fruit with short spines and (ripe fruit) only slightly tuberculate.

O. acanthocarpa Eng. and Big., is a bushy species with numerous branches up to six feet high; the branches soon become woody and come off of the stem at a slight angle; the terminal joints usually being not over 4 inches long. The dark brown needle-shaped spines are in bunches of 8 to 25 with thin light brown sheaths, and about 1¼ inches long surrounded at the base by numerous yellow glochids. The red to yellow flowers are about 2 inches across; the fruit is about 1¼ inches long with tubercles bearing 10 to 12 stout spines. It is found in Arizona and California with a range extending from Utah and Nevada to Sonora, Mexico.

O. parryi Eng., common in the interior valleys of Southern California has been much distributed by collectors under the name of *O. bernardina*, which name is forty years too late to

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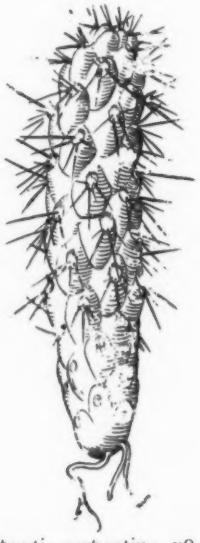
be correct. This species forms a low bush up to 18 inches high, with joints up to a foot in length. The flowers are yellow, less than 1 inch across, with weak tubercles surmounted by areoles filled with wool and glochids.

O. echinocarpa and *O. serpentina* have short tubercles which are less than twice as long as wide. The white or straw colored spine-sheaths of *O. echinocarpa* are a contrast to *O. serpentina*, whose spine-sheaths are brownish yellow.

O. echinocarpa, Eng. and Big., in favored localities grows as much as 5 feet high, but usually is much lower. The trunk is short and woody and from 1 inch to 1¼ inches in diameter; the joints are short and fat with strong tubercles; the numerous spines with their thin, papery sheaths range from bright yellow when young to brownish and finally grey; the flowers are yellowish, the sepals often being red-tipped; the ovary is short with densely spiny areoles in spirals, followed by a dry spiny fruit. It is found in Utah, Nevada, Arizona, California and Lower California.

O. serpentina Eng., was formerly common in the coastal region near San Diego, California, and extended to northern Lower California, but is rapidly becoming extinct, north of the boundary. This interesting species has bluish-green strongly tuberculate branches about 1 inch in diameter. It is found erect, ascending or prostrate with flattened tubercles which are about ½ inch long, but longer than broad, considerably flattened; the spines of which there are 7 to 20, are less than ½ inch long and have yellowish-brown paper sheaths. The flowers crowded at the top of the short branches are about 1¾ inches wide, greenish-yellow, and the outer petals are tinged with red. The ovary is strongly tuberculate and spiny, followed by a dry fruit.



Opuntia serpentina. x0.66
From The Cactaceae, Britton & Rose

Beautiful cristate forms of all the Opuntias in this series are found in California collections and are highly prized by their possessors. One of our best desert collectors, Mr. McCabe of San Diego, intends to propagate the increasingly rare *O. serpentina*, so as to conserve it for posterity.

CRESTS

(Discussion opened in Vol. I, No. 7, p. 130, by E. O. Orpet, Santa Barbara)

COL. PERRIE KEWEN Presents his Views on Crests

The wonders of nature are manifold, including the crests of the Cactaceae, wherein nature has developed an abnormal fan-shaped growth. Whether caused by normal or abnormal conditions, or by accident is an enigma to all authorities.

James West in the last issue of the "Journal," covers the subject of the formation of crests in the following statement: "All growth in organism is nothing but a multiplication of cells by division." That is certainly true in the formation of all crests, but that simply suggests the question, how to create artificially the division and multiply the cells and bring about the fasciation in the Cactaceae.

Dr. Johansen suggests in the same number of the "Journal" the advisability of experimenting with "the egg cells in the ovules just before fertilization would normally occur" by feeding it with a "foreign plasm." This sounds feasible if it were possible to determine what foreign plasm would answer the purpose. Upon this point I can be of no assistance as I am neither a geneticist or physiologist, but simply a neo-

phyte upon the outer threshold seeking knowledge.

I will not venture to suggest or attempt to solve so enigmatical a question as to a successful creation of fasciation, but simply set forth my experience in attempting to create a crest through artificial means.

Appreciating the fact that plants with all their manifold diversities of form and appearance are created on one and the same general plan, for each and all repeat the same story, it would be a natural deduction of fact that where an *Echeveria* or a *Hoveii*, with their delicate coloring, under certain conditions become pale and lose their beauty, the same can be restored by one or two waterings with a solution of dry blood and water. When plants refuse to flower, the application of a mild solution of ammonia and water make them prolific bloomers. Then why not resort to poisons when watering your cacti and note the result.

Acting upon the hypothesis that arsenic and strychnine were alkaloids containing a vegetable base derived from various plants might be used with astonishing results.

I experimented on six newly rooted *Opuntia cylindrica* cuttings: Each I gave a different solution of arsenic once a week, and I soon discovered that those that had received the stronger solution rotted, while the one that had received a mild solution had changed in appearance and seemed to resemble in a measure a distorted semblance of its original species; in fact it looked not unlike a monstrosity, but strange to relate it became dwarfed and in order to force its growth I gave it every other week for two months a mild solution of nitrate of soda, when, at the expiration of two months it developed into a most beautiful crest. For four years it was one of the most magnificent specimens I had in my garden, but the fifth year it persistently insisted in reverting and the crests remained dormant. These new shoots I constantly removed which seemed to discourage the plant and it retaliated during the winter by rotting, but I was able to save a small part of one of the crests which is now growing nicely in my hot-house.

Whether this experiment was an accident or a successful means of creating a crest artificially I am anxious to determine and will endeavor to verify this summer.

I have in my collection an Echinopsis crest which was created accidentally, having stepped upon the plant while it was quite small. Though it was badly lacerated the roots were uninjured. Several months later I happened to notice it and observed that a part of the plant had dried and that which remained was forming into a crest; today it is the finest crest I have in my collection.

Nothing would please me more than to have other experiences along these lines and advise me as to their results.

From Otto H. Roller, N. J.

I have been reading about crests and cristates in our "Journal." Here's a picture of one, and the story about it.

I had a large bowl made up of all spiny cactus. This was down in the shop for eight or nine months. Many times it was dry as a bone, and stood in a dark corner for weeks. They all kept wonderfully well. In the spring I took the bowl home and set it on a little table out under a big willow tree. Imagine my joy when I discovered this beautiful crest on my plant one day.

My idea is that by starving and neglecting the *Opuntia* for months at a time, keeping it very hot and dry, in the dark, without much water, will cause a deformed growth of crest.

Quite recently I received a hundred small *Echinopsis mullerii* from a dealer in California. These were from 1½ to 2 inches across. In looking them over a few days later I found one with distinct signs of crested growth. Here is one that simply crested by itself. I believe that's how most of them occur.

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THE CACTUS AND SUCCULENT SOCIETY OF AMERICA

Headquarters: Los Angeles, California
An International Society for all lovers of Xerophites

PRESIDENT'S COLUMN

Last month I said I would try and prove to you that the different contributors to the Journal in the past on the subject of watering cactus were all correct.

My idea was to take up each article and analyze it, but upon reviewing these articles, have decided that would require too much space so will discuss the question in general instead and leave the analyzing of each article to the readers.

Cactus and other succulents are being grown in every conceivable climate from below zero weather in Canada and in Texas* to 150° in the shade and no shade, in the tropics and from damp foggy climates to dry, arid places and many combinations of the above, such as hot and moist, hot and dry, cold and moist, cold and dry, etc., etc., ad infinitum. And plants are being grown in all these climates and weather conditions in the open ground, in sunny locations, in shady spots, in lath houses, and in glass houses—both in the ground and in pots. In pots plunged in the earth out-of-doors or in lath or glass houses and in pots on dry shelves; on shelves with sides and filled with sand and pot plunged in the sand; in glass houses heated or unheated; in sunny sun parlors or conservatories; in close cool dark rooms; in shallow pots or saucers and called miniature deserts; in tin cans, glazed pots, etc.; and in many other combinations of weather and methods.

Next comes the plant itself. It may be a variety that should be kept quite dry or it may be a variety that requires much moisture with many variations in between and all bearing on where it is being grown and also the season of the year must be considered. So you see it would be impossible for anyone to prescribe a set rule, such as water every day, water every week or every month. Instead of that, consider your location as to climate, humidity, whether in the open or in containers and the kind of containers, the kind of soil you have, etc.

The following will perhaps give you the correct foundation to base your experiments on:

Let us first make a schedule of conditions with the idea of how much water your plant needs. We have these five principal conditions you may have to consider.

No. 1. A fresh cutting.

No. 2. A rooted plant with broken or injured roots or no roots.

No. 3. A rooted plant with roots not broken as for instance you move a plant, taking a shovel full of dirt with the plant.

No. 4. A plant established in a pot or other container which is too small or you wish to set it out in the open.

No. 5. A plant in container and you wish to leave it in the container, size and soil being correct.

Next, what time of year is it? North of the Equator in most countries, the growing season is from Spring to mid-summer for most succulent plants. South of the Equator, from fall to mid-winter. The best time to take cuttings of plants not growing in containers is in the early part of the growing season, so we will consider that first.

No. 1. *A fresh cutting.* Cut should be made with a sharp knife and not broken, or chopped off. Dry the cutting in a shady place that is not damp, as in the garage. This, according to the plant, will require from a few hours to perhaps a week. No water as yet. You have now brought your cutting up to a condition equal to No. 2.

No. 2. *A rooted plant with broken or injured roots or no roots.* If the roots are broken even a very little, you should cut them off above the break with a sharp knife and dry the cut places as in No. 1. After drying plant, if in the open, put fresh, clean sand around the roots, at least two inches of sand between root ends and soil; if in pot, perhaps not so much sand.

If the soil is absolutely dry, it would be well to very slightly moisten it. Settle the dirt by pressing down firm around cutting or plant root. Don't set the cutting too deep in the soil.

After about one week, a very small amount of water may be given and perhaps once a week thereafter until the plant shows new growth, at which time you may feel pretty certain new roots have been formed.

You now have your cutting or plant up to a condition equal to No. 3. Remember all this is if it is being done in growing season. If it is in dormant season, rooting will be much slower. Therefore, water much less and if it is damp and cold, no water even for several months, or you may safely leave most varieties of cactus and many of the other succulents out of the soil or sand until spring without harming the plant as much as you would if you placed it in a position where it might get water.

If you can arrange a cutting box in the lath or glass house or under a tree, fill with one-half sand and one-half German Peat and moisten with normal solution of Semesan, procurable at any seed store (this is about 90% positive rot preventitive) and place cuttings in same. They will root quickly in this. Most opuntias are more hardy and need not have so much care; some genera will root quite slowly, perhaps 6 months or more before roots start. The semesan solution will have to be added from time to time as it loses its potency when exposed to the air.

No. 3. *Your cutting* is now a rooted growing plant. Your plant with cut roots has new roots and is growing, or you have moved a plant and have not disturbed the roots. You may water quite freely from now on, considering the variety, climate, etc.

No. 4. *Plant in container* and you wish to change to a larger one or plant outside, remove from container without disturbing the root system and firm

*Mrs. Harris from San Antonio, Texas, reports below zero weather several times last winter.

the new soil around the old and you have a condition equal to No. 5, which is undisturbed condition of a growing plant.

The point of all this is get your plant in a growing condition and rooted, then water much as you would any garden plant or shrub.

If your plant is really established in the ground or in a pot, water will make it grow during the growing season; no water and it will likely hold its own until rain or water comes, but it will not progress.

If the climate is warm or if in a glass house, the growing will continue more or less the year around if it has water, but the strength of the plant will have gone into growth and the flowers will be very scarce. If you let the plant rest during the dormant season, you will have more flowers.

XEROPHYTES LIVE IN ARID REGIONS NOT BECAUSE OF, BUT IN SPITE OF DESERT CONDITIONS.

If you improve the conditions and not too fast for the plant, you will improve the plant. If your plants are in the open ground, you will not need to water as often as you will if they are in unglazed pots which dry out quickly.

If the soil in the pots is porous, you may water often enough to keep the soil always damp, never dry, never wet. Mr. Beecroft in Escondido, Calif., who has one of the finest collections of rare plants in California, has found that he must use metal containers to hold the moisture and even then, in the hottest periods of the year even in his lath house, he must water sometimes twice a day to keep the soil moist.

Never water while the sun is on a plant, the drops of water act as a magnifying glass and concentrate the sun's rays and burn the plant the same as you burn while bathing in the surf. Also the soil becomes baked.

R. E. Willis,
2721 Bellevue Ave., Los Angeles, Calif.

SECRETARY'S NOTES

The March meeting of the Society was held at the Pasadena Public Library. As previously announced, the meeting took the form of a round table discussion. This type of meeting is frequently favored because of the opportunity it affords members to secure first-hand information concerning the subject in which they are especially interested.

Miss Kate Sessions, an experienced horticulturist of Pacific Beach, opened the discussion by giving a most interesting and instructive talk on *Aloes*. She spoke of types adapted to certain needs and made a plea that we raise *Aloes* from seed rather than spoil the beauty of the older plants by removing the offshoots.

Mr. G. A. Frick led the discussion on *Euphorbias*. He spoke especially of two species. One is the *Euphorbia intisy*, in which the United States Government is interested because of its high rubber content. The other is one in which California is interested because of its resistance to fire. A plant of this nature would be invaluable for covering the watersheds.

The El Mirador Ranch of Pasadena presented five splendid plants to the following members: Messrs. C. H. Pfadenhauer, C. H. Hamilton, D. H. Hellawell and Horace Cline, Jr. Mrs. Carl Jones of Superior, Arizona, received the out-of-town member plant.

We regret that the April meeting was inadvertently set for Easter. Later it was changed to the only available date—April 13, and notices of the change sent to all those within a day's traveling distance. Details of the trip will be given later.

President Willis desires to express his regrets in being in error concerning the identity of the Indigo Bush exhibited at Palm Springs. It was, indeed, a gorgeous plant regardless of its name.

The May meeting will be held at the historic Rancho Santa Ana on Wednesday, May 7th, at 1:30 P. M. Please note the day of the week and the hour. No other time is available in which to visit this interesting ranch. The Rancho Santa Ana lies along the the winding Santa Ana River in Orange County. The ranch is the property of Mrs. Susanna Bixby Bryant, whose guests we will be on that day.

Mrs. Bryant has here established a wonderful botanic garden of native California plants in memory of her father, Mr. John W. Bixby.

The Rancho Santa Ana figures in Southern California's interesting history and dates back more than one hundred and thirty years. During all this time it has remained undivided and has been owned by two families only.

The Botanic Garden consists of about two hundred acres and the cactus and succulent collections are nearly completed.

The Herbarium is furnished with modern fire-proof equipment. The botanical library contains over two thousand volumes.

The wonderful developments made by Mrs. Bryant to a region of natural scenic beauty surely makes a noted spot to which we are invited.

The distance from Los Angeles is about seventy-five miles, less than a two hours' drive. Take the San Diego Coast route to Fullerton, turning left on Chapman Avenue. Cross the railroad track at Placentia and continue east, again crossing the tracks. At the fork in the road, take the left fork. The ranch is fourteen miles from Fullerton.

You should arrive not later than 1:30 o'clock. There will be a very brief business meeting, after which we will start on our inspection of the gardens, green houses and herbarium. Our hostess will then serve light refreshments.

Our opportunities for such visits are limited. If you can possibly arrange to attend, you are urged to do so. Mrs. Bryant is providing the four plants which will be awarded at the meeting.

A new member of the Society from Chicago, who is compelled to spend much time in a wheel-chair, writes and sends a photograph of her cacti collection. She calls it her "Love Garden" because each plant was presented to her by a loving friend. A meaningful name and kindly acts of friendship! Speaking of the Journal, this members says, "A glance assures me that I am going to find it helpful and interesting, just what I have been searching for ever since I became interested in growing cactus."

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